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GLOSSARY OF TERMS

Used In

FOREST FIRE CONTROL

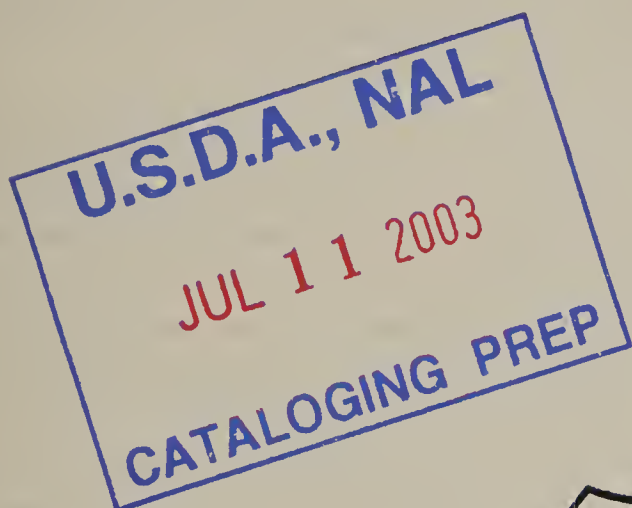
U. S. Department of Agriculture
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Glossary of Terms Used in Forest Fire Control



U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

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Foreword

In any rapidly advancing science or art there is a very definite need for standardized broad definitions of the specialized words and terms peculiar to it. Uniform terminology is essential for comprehensive interchange of ideas between workers and as the easily understood medium of presenting new ideas and new methods in publications and conferences.

Forest fire control in the United States has made noteworthy progress since the last edition of the "Glossary of Terms Used in Fire Control" was published in 1930. New terms and concepts arising from practical experience and from ever expanding research have been introduced in forest fire literature. In some cases, more concise meanings have become attached to old and accepted terms; in other cases, the current concept has made old terms obsolete.

The revised glossary here presented is intended primarily for the field man engaged in fire control and for the forest school student, rather than for the fire-research worker or student of management or psychological aspects of fire control. It makes, therefore, no claim of being all-inclusive. Only such special and technical words and terms for which it is believed there is a real need of definition for students and workers in fire control have been included. Except for instruments commonly used in measuring forest fire danger, all references to instruments, tools, and pieces of equipment have been excluded, glossary material of this kind being given in detail in the Fire Control Equipment Handbook.¹ Likewise, with some rare exceptions, terms purely of a colloquial nature have been omitted. Since by definition, a glossary should be confined to explaining uncommon words or technical terms, all words used in the ordinary dictionary sense and terms that are self-explanatory have been excluded. Lastly, no terms for which satisfactory definitions are not yet available because of lack of agreement among workers in the field of forest fire control have been included.

With few exceptions terms as they are commonly used with their definitions have been listed alphabetically. In a few cases where it may be useful to have definitions of related terms considered together, they have been grouped. In all such instances the terms as commonly used are also shown in proper alphabetical order and cross-referenced to the definitions.

Although this edition of the glossary has been compiled wholly by men engaged in forest-fire control on the national forests, the interests of private and other public agencies concerned with protecting forest land from fire in a compendium of this type have been recognized. The glossary in its present form represents an effort to reflect the widest current usage of forest fire terminology.

Finally, it should be emphasized that any glossary is but a means to an end—the removal of the barrier to an accurate exchange of thought and expression. Unless a conscientious effort is made by those engaged in forest fire work to use the terms accurately, it will not accomplish its purpose.

¹U. S. Department of Agriculture unnumbered publication, 1939.

Glossary of Terms Used in Forest Fire Control

Prepared and Approved by the U. S. Forest Service

Absolute Humidity. *See* Humidity, absolute.

Actionable Fire. A fire started or allowed to spread in violation of any law or regulation.

Alidade. A straightedge equipped with sights; an essential part of a device for locating fires.

Anemometer. An instrument for measuring wind velocity in miles per hour or other units.

Aneroid Barometer. An instrument which indicates atmospheric pressure and usually the elevation above sea level. The actuating element consists of partially exhausted, thin, corrugated metallic cells.

Appalachian Scale. *See* Scale, Appalachian.

Area Needing Protection. In general any acreage needing systematic fire control to avoid serious damage to watersheds or other damage to the land or the growth thereon or to safeguard adjacent lands or other values. For estimate and allotment purposes on national forests, the term includes all acreage inside the legal boundaries of national forests and approved purchase areas, less the following deductions:

- (a) Portions of approved purchase areas on which organized fire control has not been established.
- (b) Blocks of barren lands, noninflammable grass or water surface even if lying in two adjacent forests, if larger than 9 square miles, on which fires will not start or will not run far enough to cause concern. The high Sierra in California, Mt. Hood, and areas in Colorado above timber line are the most perfect examples.
- (c) Solid blocks of more than 9 square miles of private or State land which are protected by the owners, directly or through agencies other than the Forest Service.

Atmospheric Visibility. *See* Visibility, atmospheric.

Attack Time. *See* Elapsed time.

Azimuth. The angle measured from the north in a clockwise direction, which any line makes with the true north and south reference line.

Azimuth, Back. Azimuth plus 180° when Azimuth is 180° or less. Azimuth minus 180° when Azimuth is more than 180° .

Azimuth Circle. A circle graduated in degrees in a clockwise direction.

Back Azimuth. *See* Azimuth, back.

Backfire. A fire intentionally set on the fire side of a control line as a part of the process of controlling a fire. (Using such a fire when the control line is close to the fire edge is sometimes called "burning out" or "clean burning".)

Base Camp. *See* Camp, base.

Beaufort Scale. *See* Scale, Beaufort.

Blind Area. Area where the ground or the vegetation growing thereon can not be seen directly from any established lookout station or point, or by any lookout cooperator, when atmospheric visibility is normal. *See* Seen area.

Boss. A man responsible for certain definite activities on a fire. The following terms should not be confused with payroll titles:

Fire Boss. The man in charge of all operations on a fire.

Division Boss. The man who on a large fire has charge of two or more sectors. *See* Sector.

Sector Boss. The man in charge of a defined section of the perimeter of a fire and supervising two or more crews.

Crew Boss. The man in charge of a group of men composing a crew unit larger than a straw-boss unit. (Sometimes called "foreman". When necessary, has straw bosses working under his supervision.)

Straw Boss. The man directly supervising the work of a small group of men under the direction of a "crew" or other boss.

Patrol Boss. The man in charge of patrol and mop-up after control-line construction.

Camp Boss. The man in charge of camp activities in the fire camp. (Sometimes called "camp manager".)

Brush. A standing woody growth of species that do not form forests, e. g., chaparral, scrub oak, etc. (Not to be confused with Slash, Debris, or Reproduction.)

Burning, Controlled. The use of fire as a tool in forest protection and management; burning that is confined, according to a plan, to specific areas and intensities of heat.

Burning, Light. The use of fire at intervals in broadcast burning on the theory that such repeated fires will consume much of the forest fuels and so reduce the volume of these materials that accidental fires would cause less damage and would be controlled more easily.

Burning Period. That part of the day when a fire spreads more rapidly than at any other time. (Usually thought of as the "heat of the day" but may also occur during the night under adverse fire-weather conditions.)

Camera, Photo-Transit. *See* Photo-transit camera.

Camp, Base. The central base, usually only on larger fires, for the assembly and distribution of men, equipment, and supplies. *See* Camp, side.

Camp Boss. *See* Boss.

Camp Manager. *See* Boss, camp.

Camp, Side. A fire camp, usually small, for accommodating a crew working on an isolated section of a fire. (Sometimes called "spike camp".) *See* Camp, base.

Cat Face. *See* Fire scar.

Causative Agencies. The causes or agencies responsible for the origin of forest fires. *See* Causes of fires.

Causes of Fires. The eight standard major causes of forest fires recognized in national forest practice are:

Camp Fire. Fires resulting from fires started for the purposes of cooking, warming, or providing light by persons camping or traveling on or near wild land, except those started by railroad or lumbering employees in connection with their duties.

Debris Burning. Fires resulting from any fires originally set for clearing land for any purpose, or for rubbish, garbage, range, stubble, or meadow burning without intent on the part of the burner to have such fires spread to lands not intended to be burned. (This does not include lumbering fires or hazard reduction on right-of-ways of common-carrier railroads.)

Incendiary. Fires that in the judgment of the reporting officer are deliberately set by anyone with the intention of burning over land or damaging property not owned or controlled by him.

Lightning. Fires caused directly or indirectly by lightning.

Lumbering. Fires, except those caused by smokers, resulting from lumbering operations. (Lumbering operations include all activities connected with the harvesting or processing of wood for use or sale. Lumbering fires will include those caused by logging railroads which are not common carriers.)

Railroad. Fires resulting from maintenance of right-of-ways or construction or operation of common-carrier railroads.

Smoker. Fires caused by smokers' matches, or by burning tobacco in any form.

Miscellaneous. Fires that cannot be properly classified under any of the seven standard causes just listed. (Fires of unknown causes should be classified under the most probable cause and not under "Miscellaneous".)

Character of Fires.

Smoldering. A fire making no appreciable spread and burning without flame.

Creeping. A fire spreading slowly, usually with low flame.

- Running.** A fire spreading rapidly and with a well-defined head but without spotting or crowning.
- Spotting.** A fire spreading as a result of sparks or embers falling ahead and starting new fires.
- Crowning.** A fire advancing primarily from crown to crown rather than from ground to crown. *See* Types of fires.
- Checking Station.** A contact point on main routes of travel, usually at or near the boundary of the forest, where traffic is checked and travelers contacted as a fire-prevention measure. Sometimes called "registration station".
- Class A Fire.** A fire of one-fourth acre or less.
- Class B Fire.** A fire of more than one-fourth acre but less than 10 acres.
- Class C Fire.** A fire of 10 acres or more but less than 100 acres.
- Class D Fire.** A fire of 100 acres or more but less than 300 acres.
- Class E Fire.** A fire of 300 acres or more.
- Classification, Control-Line.** *See* Control-line classification.
- Climate.** The long-time average, or generally prevailing weather conditions of any locality. *See* Weather.
- Cloudiness.** The fraction of the sky covered by clouds. It is estimated in tenths and expressed as follows:
- | | |
|--------------------|----------------------------|
| Clear..... | 0 to .3 covered |
| Partly Cloudy..... | .4 to .7 " |
| Cloudy..... | .8 to completely overcast. |
- Closed Area.** An area in which because of the fire danger travel is prohibited or restricted for temporary periods.
- Cold Trailing.** Very careful inspection of a partly dead fire edge, digging out any live spots or trenching short pieces of live edge, and feeling with hands where there is any doubt as to whether any fire remains.
- Constant Danger.** *See* Danger, constant.
- Control a Fire.** To surround a fire and any spot fires therefrom, with control lines and complete the backfiring of any unburned surface adjacent to the inner edge of the control lines.
- Controlled Burning.** *See* Burning, controlled.
- Control Line.** An inclusive term for all the constructed or natural barrier used in controlling a fire. Includes (1) clearing when that is necessary, (2) the fire line when that is needed, (3) removal of immediate threats to line constructed, (4) the edge of a grass or other fire which has been worked by direct method, (5) roads, lakes, bare rock, or other natural barriers used in controlling a fire.

Control-Line Classification. The principal classes of control-line construction methods with respect to distance from the fire edge are:

Direct Method. A method of suppression that applies work immediately at the edge of the fire. (Includes building a control line there, beating out, extinguishing with water or earth, digging out and shoveling in burning material, etc.)

Two-Foot Method. A method of suppression in which a fire line is constructed not over 2 feet from edge of fire. (It contemplates no backfiring, and aims to leave a minimum strip of unburned material. The distance from the edge permits safer use of hand tools than the direct method.)

Parallel Method. The method used in suppression when a continuous fire line is constructed parallel to but within 100 feet from the edge of the fire and the intervening strip is immediately burned out. (The object is to keep just far enough away from the fire to enable men to work most efficiently.)

Indirect Method. Under this method the control line is located along favorable breaks in topography or natural firebreaks, and the intervening strip is backfired. (By implication any control line more than 100 feet from the edge represents application of the indirect method, even if the line is not located along a break in the topography.)

Control Time. *See* Elapsed time.

Controlled. *See* Control a fire.

Cooperator, Fire. A local person or resident with whom arrangements have been made in advance (1) to furnish incidental detection service at no charge or (2) to fight or to direct the action on fires in his vicinity with or without compensation, or (3) to be available for full-time service with pay. Limited authority to hire crews and to incur other expenses in fighting fires is often delegated to cooperators in advance. Called by various local terms, such as "fire agent", "key man", "warden", "per diem guard".

Coverage. The extent to which some standard such as travel time or detection has been met by an existing or a planned system.

Crew Boss. *See* Boss.

Crown Fire. *See* Types of fires.

Cumulative Relative Humidity. *See* Humidity, cumulative relative.

Damage, Fire. *See* Fire damage.

Danger Board. A danger meter especially designed for display purposes. *See* Danger meter.

Danger Class. A numerical or percentage rating of the variable fire danger existing at a given time.

Danger, Constant. A term used to include all phases of fire danger which are, for a given area, relatively unchanging, e. g., normal risk, topography, all fuels, exposure to prevailing wind, etc. *See* Danger, variable.

Danger, Fire. A general term expressing the sum total of both the constant and the variable factors which determine whether fires will start, spread, and do damage and that determine their difficulty of control. (Constant factors include values at stake, normal occurrence, fuel type, slope, aspect, soil type, etc. Variable factors include lightning, incendiary epidemics, illegal burning, inflammability, wind velocity, etc.)

Danger Meter. A device which by integrating the combined effect of the more significant variable fire-danger elements, rates current fire danger into specific classes. (For each class, the specific fire-control measures which should be taken are indicated in some appropriate way.) *See* Danger board.

Danger, Variable. A term used to include all phases of fire danger of a given area which vary from day to day and result in producing variations of danger within the season and from year to year, e. g., all weather elements, fuel moisture content, variable man-caused hazards, etc. *See* Danger, constant.

Debris Burning. *See* Causes of fires.

Detection. The act or system of discovering and locating fires.

Direct Method. *See* Control line classification.

Direction, Wind. *See* Wind direction.

Discovery. The act of determining the existence of a fire. Differs from detection in that location is not required. *See* Detection.

Discovery Time. *See* Elapsed time.

Dispatcher. A member of the fire-control organization who receives reports of discovery and status of fires, determines the locations of fires, and sends men, supplies, and equipment to suppress fires. (A central dispatcher functions over an entire forest or several ranger districts; a ranger district dispatcher, within a ranger district only.)

Division. A group of two or more sectors on a large fire. (Size of division should be no larger than the division boss can supervise and inspect adequately each shift.)

Division Boss. *See* Boss.

Drift. The term used by lookout men to give the direction taken by smoke from a fire, particularly in describing fires the bases of which are partially or wholly unseen, but are evidenced by smoke rising above the obstruction.

Drift Smoke. Smoke from fires or industrial activities which is moved by air currents into other areas.

Dry Storm. A lightning storm with less than 0.10 inch of precipitation measured or estimated as reaching the ground.

Duff. The dead organic material making up a part of the forest floor.

Duff Hygrometer. An instrument for measuring the moisture content of the litter or duff.

Economic Theory. A theory of forest fire control which postulates that the object of control is to keep total cost (prevention plus presuppression plus suppression plus damage) to a minimum. (Abbreviated as minimum $P+P+S+D$ or, least cost, or least cost and damage. *See* Minimum-damage theory.)

Edge, Fire. *See* Fire edge.

Effects, Fire. Any consequence—neutral, detrimental or beneficial—resulting from fire.

Effects, Net Fire. The sum of all effects, both detrimental and beneficial, resulting from burning.

Elapsed Time. The difference in time between the beginning of any fire control action and its actual accomplishment:

Discovery Time. Elapsed time from start of fire (known or estimated) until the time of the first discovery which results directly in subsequent suppression action.

Report Time. Elapsed time from discovery of a fire as defined above until the first man who goes to the fire is notified of the existence and location of the fire.

Attack Time. Elapsed time beginning when the man to perform first effective work on a fire learns that there is a fire and ending when he begins first control work.

Control Time. Elapsed time from first effective work until fire is controlled. *See* Control a fire, and Control line.

Mop-Up Time. Elapsed time from completion of controlling process until enough mop-up has been done to insure that the fire will not break out.

Elapsed Time Standards. Definite maximum allowable periods of time set for various steps of the suppression job.

Emergency Rations. *See* Rations, emergency.

Equipment, Fire. *See* Fire control equipment.

Extra-Period Fire. A fire not controlled by 10 a. m. of the day following discovery.

Fag Station. An area fire proofed and signed to allow smoking in a restricted area in forests closed to smoking.

False Alarm. (1) A smoke or fire reported but requiring no actual suppression, e. g., donkey engine, brush burning under control, and (2) any phenomenon reported as a fire but upon investigation found not to be a fire, e. g., dust from a band of sheep. *See* Smoke, false.

False Smoke. *See* Smoke, false.

Fan Psychrometer. *See* Psychrometer, fan.

Feeling for Fire. Act of following an edge of a burn after fire is apparently out, and feeling with bare hands the burned edge to determine if ground fire still exists.

Fingers of a Fire. *See* Parts of a fire.

Fire Assistant. A man specially qualified in fire control, who, acting under the general direction of the forest supervisor, specializes in the study of fire problems and in the execution of fire-control activities.

Fire Behavior. A general term used to describe the action of fire as a result of the complex of variable factors that influence it.

Fire Boss. *See* Boss.

Firebreak. A partially or wholly cleaned barrier constructed before a fire occurs and designed to stop or check fires that may occur, or to be used as a line from which to work.

Fire Chief. The man in charge of fire control activities of a region, State, or association. (Not to be confused with "fire assistant" or "fire boss".)

Fire Control. Protection of wild land and the growth thereon from fire. (Includes prevention, presuppression, and suppression.)

Fire-Control Equipment. All the tools, conveyances, machinery, and special instruments or devices purchased for or allocated to fire-control purposes, but not including structures.

Fire-Control Improvements. The structures used in fire control, e. g., look-out towers, guard cabins, telephone lines, roads, trails, etc.

Fire-Control Planning. A technological and administrative management process used in preparing for action in protecting wild land from fire.

Fire Damage. (1) The value expressed in money or otherwise, of the loss, tangible or intangible, caused by fire; (2) a general term applying to the destructive effects of forest fires either (a) direct, e. g., killing or burning of trees, forage, and crops; destruction of fish and game, scenery or facilities for recreation; destruction of improvements; and loss of human life; or (b) indirect, e. g., reduction in rate of growth resulting from site deterioration; physical injury such as wounding; subsequent attack by fungi and insects; reduction in watershed values resulting from the destruction of the infiltration capacity of the soil; destruction of favorable conditions for wildlife; and depreciation in property or social values.

Fire Danger. *See* Danger, fire.

Fire-Danger Board. *See* Danger board.

Fire-Danger Class. *See* Danger class.

Fire-Danger Meter. *See* Danger meter.

Fire-Danger Station. *See* Station, fire-danger.

Fire Dispatcher. *See* Dispatcher.

Fire Edge. The line, usually irregular, to which a fire has burned at a given moment.

Fire Effects. *See* Effects, fire.

Fire Foam. A term applied to the product of various chemicals which when mixed with water, cause a great increase of volume by forming froth or bubbles, which may or may not be filled with noninflammable gas. (The bubbles adhere to the burning fuel and reduce combustion by excluding oxygen as well as by cooling and moistening.)

Fire Guard. *See* Guard, fire.

Fire Hazard. *See* Hazard.

Fire Line. The strip which, when necessary, is scraped or dug to mineral soil in a control line; a part of a control line. (Fire line exists only when it has been necessary to remove inflammable material from a narrow ribbon of mineral soil. The edge of a grass fire which has been beaten out is a control line but not a fire line.)

Fire-Line Patrol. *See* Patrol.

Fireman. A guard whose dominant function is suppression. (He generally stays at a fixed point awaiting an order to go to and suppress a fire.) *See* Lookout fireman, Smoke chaser.

Fire Pack. A unit of tools, supplies, and equipment prepared in advance for immediate and convenient transportation to a fire.

Fire, Parts of. *See* Parts of a fire.

Fire Patrol. *See* Patrol.

Fire Prevention. *See* Prevention.

Fireproof. To treat an area, hazard, road, etc., so as to reduce the danger that fires will start or spread, e. g., to fireproof a roadside or campground.

Fire Protection. Synonymous with "fire control" which is the preferred term.

Fire Scar. The physical evidence in the form of a superficially healed fire wound or cavity.

Fires, Causes of. *See* Causes of fires.

Fires, Character of. *See* Character of fires.

Fires, Class of. *See* Class A to E fire.

Fire Season. The period or periods of the year during which fires are likely to occur, spread, and do sufficient damage to warrant organized fire control.

Fire Suppression. *See* Suppression.

Fire Trap. An accumulation of highly inflammable material or any situation in which it is dangerous to fight fire on a bad day.

Fires, Types of. *See* Types of fires.

Fire Warden. *See* Cooperator, fire.

Fire-Weather Forecast. A weather prediction specially prepared by the U. S. Weather Bureau for use by forest fire control agencies. (Three types are issued: (1) a "general outlook" for 2 to 3 days; (2) a "daily forecast" for the ensuing 36 to 48 hours; and (3) "special localized forecasts" for short periods (3 to 12 hours) when requested.)

Fire-Weather Station. *See* Station, fire-weather.

First Work Period. Time between discovery of fire and 10 a. m. of following calendar day. (Second and succeeding work periods are 24 hours long beginning at 10 a. m.)

Flanks of a Fire. *See* Parts of a fire.

Flanking. A method of attacking a fire by working around either edge, usually from the point of origin, and endeavoring eventually to pinch it out by connecting the two flank lines at the head of the fire.

Flash Fuels. *See* Fuels, flash.

Foam. *See* Fire foam.

Follow Up. The act of supporting the first man or men who go to a fire by sending additional manpower to facilitate either suppression or mop-up work.

Foreman. *See* Boss, crew.

Forest Fire. A fire burning on wild land in peat, duff, litter, ground cover, or crowns and not being used as a tool in forest protection or management in accordance with an authorized plan.

Forest Protection. The activities connected with the control of damage to forests from fire, insects, disease, and other harm-producing agencies.

Forest Pyrology. The science of protecting forests from fire.

Freeburning. Used to describe a fire or portion of the perimeter of a fire on which no work has been done to hinder or stop its spread.

Front of a Fire. *See* Parts of a fire.

Fuel-Moisture-Indicator Sticks. Specially prepared wooden sticks of known dry weight, which are exposed and weighed periodically to determine their change in moisture content which indicates the change in moisture content of lightweight forest fuels.

Fuel Reduction. Any action taken to reduce the volume of fuel as by burning. *See* Hazard reduction.

Fuels, Flash. Light fuels such as grasses, ferns, tree moss, etc., which ignite readily and are consumed very rapidly and thus contribute to very rapid rate of spread.

Fuels, Heavy. Fuels such as snags, windfalls, branchwood, etc., which, while they usually burn more slowly than flash fuels, liberate a greater amount of heat and burn more fiercely, thus materially increasing the difficulty of suppression.

Fuel-Type Classification. The division of forest areas into units according to both the normal rate of spread of fire on an average bad day, and the resistance to control line construction offered by the fuels, topography, and soil.

Gravity Chance. Physical conditions that offer an opportunity to put water on a fire by the force of gravity alone.

Gridiron Method. A method of finding a small fire. (The fireman paces a certain distance at right angles to the line of sight from lookout station, then runs a compass line parallel to the line of sight, repeating the process if necessary, to cover a considerable area on each side of the line of sight.)

Ground Fire. *See* Types of fires.

Guard, Fire. A general term applied to patrolmen, firemen, lookout men, and others, who, working under direct supervision of a district ranger, are employed during the fire season for the prevention, and suppression of fires, and presuppression activities.

Guard, Per Diem. *See* Cooperator, fire.

Guard Unit. A natural unit, usually part of a ranger district, assigned to a fire guard.

Gutter Trench. A ditch dug on a slope below a fire; designed to catch rolling cones, small chunks, and other rolling burning material. *See* Control line, Fire line.

Hang-Over Fire. A fire started by lightning which remains dormant until a later period when it becomes active. (Includes a lightning fire when the lookout man sees the strike or smoke but which subsides before ground forces are able to locate it until subsequent rediscovery. Does not include fires merely difficult to find.)

Hazard. A term applied to materials which form a threat of special suppression difficulties if ignited, and which it is practicable to treat in ways which will remove or diminish the threat. (For example: Snags; jungles of wind-falls; fuels immediately adjacent to roads or railroads; fuels around village dumps, ash dumps, or buildings; such dumps and buildings themselves as distinct from the fuels surrounding them; the burnable materials collected at small sawmills; old sawdust piles; meadows covered at certain times with inflammable grass; and man-made debris around homes.)

Hazard Reduction. The removal, destruction, or treatment of inflammable physical materials, at any time other than on a going forest fire, for the purpose of diminishing the chances of fires starting or spreading. "Physical materials" may or may not include those included in the terms "flash" or "heavy" fuels.

Haze. A condition of the atmosphere due to the presence of light vapor, fine dust or smoke, which impedes vision and decreases the transparency of the atmosphere; also produced at times by optical irregularities in the atmosphere.

Haze Meter. *See* Visibility meter.

Head of a Fire. *See* Parts of a fire.

Held Line. All worked line which has not been abandoned for a line on a new location when control and mop-up are completed. (Lost line, unbackfired natural barriers, and unused safety lines are excluded.)

Herbaceous Stage. A term applied to the current inflammable condition of herbaceous vegetation. (Three stages are generally recognized—green, curing, and cured.)

Hold-Over Fire. *See* Hang-over fire.

Hot Spotting. Checking the spread of the fire on main leads or at salient points as an emergency measure employed in advance of control line construction.

Hour Control. A term used to describe the elapsed time, from origin of a fire to arrival of the first man or men of a given suppression force, required to hold acreage burned to a predetermined area for a given unit or cover type.

Humidity, Absolute. (1) The mass of water vapor per unit volume of space, (2) the gaseous pressure exerted by water vapor present in a space.

Humidity, Cumulative Relative. The algebraic sum of the departures from or differences between daily relative humidity readings and a fixed base.

Humidity, Relative. (1) The ratio of actual mass of water vapor per unit of volume to mass of water vapor that would saturate that volume at the same temperature and pressure; (2) the ratio of actual vapor pressure to saturated vapor pressure at the same temperature. In the forest fire weather forecasts issued by the U. S. Weather Bureau relative humidity forecasts are modified by the following terms, the changes indicated referring to the previous corresponding 24-hour period:

Higher Humidity. Modified by the following terms to indicate magnitude of expected change:

Slightly—Change of 5 per cent or less.

Somewhat—Change of 6 to 15 per cent.

Materially—Change of 16 to 30 per cent.

Decidedly—Change of 31 per cent or more.

Lower Humidity. Modified by the terms given under “Higher” to indicate magnitude of expected change.

Little Change. Change of less than 5 per cent expected.

Maximum or Minimum. The maximum or minimum humidity expected during the period is indicated by specific figures.

Rising or Falling. Progressive change in the direction indicated. The approximate level of relative humidity expected during the next 24-hour forecast period is indicated by these terms:

Very High—More than 80 per cent.

High—61 to 80 per cent.

Moderate—41 to 60 per cent.

Low—21 to 40 per cent.

Very Low—11 to 20 per cent.

Acutely Low—10 per cent or less.

Becoming. Used to indicate a change from either a higher or lower humidity level and used in connection with the foregoing terms.

Humidity: Relative-Humidity Tables. Psychrometric tables giving only the relative humidities prevailing at different combinations of wet- and dry-bulb temperatures for specific barometric pressures or elevations above sea level.

Hygograph. A self-recording instrument for measuring relative humidity.

Hygrometer, Duff. *See* Duff hygrometer.

Hygrothermograph. An instrument which measures and automatically records both relative humidity and temperature on a single chart.

Incendiary Fires. *See* Causes of fires.

Independent-Action Fires. Fires in which some part or all of the suppression action up to first effective work is taken independently by other than organized cooperators or forest service presuppression forces.

Indirect Method. *See* Control line classification.

Individual-Assignment Method. A system of managing men to obtain maximum output of control line per man engaged. Essential features of the method are:

- (a) Men are assigned individually to designated lengths of fire edge, the task of each man being to hot spot the fire as needed, construct control line, and proceed with backfiring and mop-up.
- (b) The emotional stimulus from a sense of individual responsibility for a specified piece of line and for measurable accomplishment in control line construction.

See One-lick method and Man-passing-man method.

Inflammability. The relative ease with which fuels ignite and burn regardless of the quantity of the fuels.

Key Man. *See* Cooperator, fire.

Knock Down. To treat the most vigorously flaming portions of the fire edge until they are not spreading rapidly or creating any great heat. (A process used in Hot spotting.)

Least-Cost Theory. *See* Economic theory.

Legitimate Smoke. *See* Smoke, legitimate.

Light Burning. *See* Burning, light.

Lightning Fires. *See* Causes of fires.

Line Patrol. *See* Patrol.

Litter. The top layer of the forest floor which consists of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles, the structures of which have been little altered by decomposition.

Logging Fires. *See* Causes of fires, lumbering.

Lookout. Term should not be used alone due to possible confusion. *See* Primary lookout, Lookout fireman, Lookout man, Lookout point, Lookout station, Lookout tower.

Lookout Dispatcher. A lookout man, who, in addition to detection duties, handles fire dispatching for a ranger district.

Lookout Fireman. A guard placed at a lookout station, whose duties combine the functions of lookout man and fireman.

Lookout House. A building containing living quarters and with walls largely of glass, constructed on a natural or artificial elevation to permit unobstructed view of the entire horizon from its interior.

Lookout Man. A guard placed at a lookout station to detect and report fires.

Lookout Observatory. A small building with walls largely of glass on or separate from a tower, to be occupied by a lookout man, but not designed for living quarters. (Not to be confused with "lookout house".)

Lookout Patrolman. A guard who traverses ridges and other topographic features of vantage, whose function is to discover, locate, report, and suppress fires in a locality, much of which is not visible from any lookout point.

Lookout Point. A general term for topographic vantage points systematically selected for detection purposes.

Lookout, Primary. A lookout station occupied by a lookout man who is not sent to fires. *See* Lookout fireman.

Lookout Station. A general term for the location and structures used for detecting and reporting fires. (Includes planned cooperator lookout stations.)

Lookout Station, Temporary. A detection station occupied only occasionally when special needs arise, e. g., if visibility is reduced by drift smoke or in times of unusually high danger.

Lookout Tower. A structure erected to enable the lookout man to get above nearby obstructions to vision. It may be capped with a lookout house or an observatory, the latter being too small for living quarters.

Lumbering Fires. *See* Causes of fires.

Man-Passing-Man Method. A term used to distinguish ordinary methods of managing men on a fire from the one-lick or individual-assignment methods. The distinctive features of the man-passing-man method in contrast to the other two methods are:

- (a) After completing a stretch of clearing or fire-line construction work a man passes by other men in moving to his next task. (Under certain conditions the man-passing-man method must be resorted to in clearing under the one-lick method.)
- (b) In certain infrequent but important situations the method provides a better chance for a fast retreat and must therefore be used as a safety measure.
- (c) Sectors and divisions are needed on a large fire for line construction organization as well as for patrol and mop-up.

(d) The method is not designed with any particular reference to emotional response by members of the crew or to speed of line construction.

(e) The method can be used with less advance planning and training.

See One-lick method and Individual-assignment method.

Map, Fire-Progress. A map maintained on a large going fire showing sectors and divisions, status of control-line construction, some culture, and the most salient topographical factors. (Posted periodically or whenever information comes in.)

Map, Occurrence. A map showing by suitable symbols the starting points of all fires of various classes or causes for a given period.

Map, Panoramic-Profile. A special map drawn around the circumference of a fire-finder map to show the profile of the topography as it appears from the lookout point.

Map, Panoramic—Photograph. Panoramic photographs from a lookout point, on which azimuths and vertical scales have been marked, for use in connection with a fire finder to locate fires.

Map, Seen-Area. A map showing the particular territory in which either the ground surface or the vegetation growing thereon is seen directly up to some predetermined radius from a lookout point.

Map, Travel-Time. A map indicating the length of time required to reach various parts of a unit by the initial action fireman or crew when the planned positions are occupied.

Map, Water-Supply. A map showing location of supplies of water readily available for pumps, tanks, trucks, camp use, etc.

Maximum Thermometer. A special type of thermometer that registers the highest air temperature between settings of the instrument.

Measurable Precipitation. Precipitation equivalent to rainfall of 0.01 inch or more. Less than that amount is termed a trace.

In forest fire weather forecasts issued by the U. S. Weather Bureau, precipitation forecasts are modified by the following terms:

Light. Less than 0.10 inch of rain, or less than a 1-inch layer of snow.

Moderate. Between 0.10 inch and 0.50 inch of rain, or between a 1- and 5-inch layer of snow.

Heavy. More than 0.50 inch of rain, or more than a 5-inch layer of snow.

Meter, Fire-Danger. *See* Danger meter.

Minimum-Damage Theory. A theory of forest-fire control which assumes or asserts that the objective is to keep fire damage to a minimum. *See* Economic theory.

Minimum Thermometer. A special type of thermometer that registers the lowest air temperature between settings of the instrument.

Miscellaneous Fires. *See* Causes of fires.

Mopping Up (Mop-Up). The act of making a fire safe after it is controlled, such as extinguishing or removing burning material along or near the control line, felling snags, etc.

Net Fire Effects. *See* Effects, net fire.

Non-Statistical Fires. *See* Statistical fires.

Normal Season. A season in which weather, rated fire danger, and number and distribution of fires are approximately average.

Northern Rocky Mountain Scale. *See* Scale, Northern Rocky Mountain.

Occurrence Map. *See* Map, occurrence.

One-Lick Method. A system of managing men to obtain maximum output of control line per man engaged. Essential features of the method are:

- (a) An entire crew of control-line construction men moves forward without changing their relative positions in line.
- (b) Tools are distributed to men in the line in the order in which the tools will be needed and in the balanced quantity required by the work to be done (as between clearing and digging).
- (c) As men move forward they do one lick of work, then advance one or more steps, the number of steps being controlled primarily by the number of men engaged and the consequent proper spacing of licks in order that the control line may be complete when the last man has passed over it. Number of steps between licks is directly regulated by instructions given at the start or as the work progresses.
- (d) The emotional stimulus which comes from rhythm, almost continuous forward movement, and feeling of large accomplishment by and identity with the entire crew.
- (e) The chance afforded by the method to assemble in one file enough men to complete control line as rapidly as the lead man can forge ahead indicating where the control line is to be located and what work is to be done on it.
- (f) The underlying organization concept. In ordinary practice large control line construction jobs are divided into sectors, divisions, and even zones. This static organization pattern is thus identical for construction, patrol, and mop-up. Under the one-lick method, sectors and divisions are still necessary on large fires for patrol and mop-up, but are organized for that purpose only. Line construction is a separate function requiring a moving organization pattern. Major organization essentials are: (1) starting points for crews, and (2) balance between strengths of crews and the work to be done by each in order to connect with the work of the opposing crew at the desired time and place.

See Individual-assignment method and Man-passing-man method.

Palouser. A light for night travel improvised from a candle and a tin can. (Often called a "bug".)

Panoramic-Photograph Map. *See* Map, panoramic—photograph.

Panoramic-Profile Map. *See* Map, panoramic-profile.

Parallel Method. *See* Control line classification.

Parts of a Fire.

Fingers of a Fire. The long narrow tongues of a fire projecting from the main body.

Flanks of a Fire. The portions of the edge of a fire between the head and the rear.

Head of a Fire. The portion of the edge of a fire on which rate of spread is most rapid.

Rear of a Fire. The portion of the edge of a fire on the windward or downhill side.

Patrol. (1) The act of moving over a given route to contact and impress people with the need for care with fire. (2) The act of moving over a given route to prevent, detect, and suppress fires. (3) The act of moving back and forth over a length of control line during or after line construction, to prevent breaks, discover spot fires, and when time permits, do mop-up work.

Patrol Boss. *See* Boss, patrol.

Patrol, Line. *See* Patrol (3).

Patrolman, Lookout. *See* Lookout patrolman.

Patrol Observatory. A post, tower, tree, or designated point close to a travel route and which is shown on the plotting map. (Readings from these points can be plotted in the same way as those from the regular lookout points.)

Patrol Route. A line of travel followed by a man assigned to patrol. (May or may not be a predetermined route.)

Per Diem Guard. *See* Cooperator.

Perimeter of a Fire. (1) The entire outer edge of the fire. (2) The length of the outer line or edge of the fire.

Photo-Transit Camera. A special type of panoramic camera that records the vertical angle and the true azimuth of objects photographed on the landscape in relation to the photographic station.

Precipitation, Measurable. *See* Measurable precipitation.

Preparedness. (1) Condition or degree of being completely ready to prevent or suppress fires. (2) Mental readiness to recognize increases in fire danger and act promptly when action is appropriate.

Presuppression. Those fire-control activities concerned with the organization, training, instruction, and management of the fire-control organization, and with the inspection and maintenance of fire-control improvements and equipment and supplies to insure effective fire suppression. *See* Fire control, Prevention, Suppression.

Prevention. Those fire-control activities concerned with the attempt to reduce the number of fires through education, hazard reduction, law enforcement, etc., or to hold the number down after they have been reduced to a satisfactory level. (Not a part of presuppression.) *See* Fire control, Preparedness, Presuppression, Suppression.

Primary Lookout. *See* Lookout, primary.

Protection Forest. An area covered with woody growth, managed primarily for its beneficial effects on water, or soil movement rather than primarily for wood or forage production.

Protection, Forest. *See* Forest protection.

Protection Improvements. *See* Fire-control improvements.

Psychrometer. An instrument for measuring atmospheric relative humidity, and consisting usually of two thermometers, the bulb of one being covered with cloth which is moistened and thoroughly ventilated when the instrument is used.

Psychrometer, Fan. A type of psychrometer in which a current of air is circulated across the wet- and dry-bulb thermometers by means of a small fan.

Psychrometer, Sling. A particular type of psychrometer in which the instrument is secured to a cord, chain, or handle so that the psychrometer can be whirled rapidly in order to insure a large quantity of air coming in contact with the two bulbs thus accomplishing adequate ventilation of the wet-bulb thermometer.

Psychrometric Tables. Tables showing the relative humidity, dew point, vapor pressure, etc., prevailing at different combinations of wet- and dry-bulb temperatures for specific barometric pressures or elevations above sea level. *See* Humidity, absolute; Humidity, relative.

Pump Chance. Natural source of water near enough to a fire and in sufficient quantity for effective use of power pumps in suppression.

Radius of Vision. *See* Vision, radius of.

Railroad Fires. *See* Causes of fires.

Rain Gage. An instrument for measuring the amount of precipitation; it consists usually of a vessel to catch the rain and a measuring stick for determining its depth.

Range of Vision. *See* Vision, radius of.

Rate of Spread. The increase in size of a fire expressed in chains of perimeter per hour or some other similar units.

Rating, Danger. *See* Danger meter.

Ration. A quantity of food sufficient to supply one man one day.

Rations, Emergency. Food assembled in advance in standard units of varying sizes and held ready for instant use of men responsible for suppressing fires.

- Rear of a Fire.** *See* Parts of a fire.
- Re-Burn.** Second burning over of an area inside a control line over which fire previously ran but did not consume all inflammable material.
- Relative Humidity.** *See* Humidity, relative.
- Relative Humidity Tables.** *See* Humidity; Relative-humidity tables.
- Report Time.** *See* Elapsed time.
- Reporting Incendiary Fires.** *See* Sets.
- Resistance to Line Construction.** A term used to express the relative difficulty of constructing control line as determined by the character and density of fuels, soil conditions, and topography. It may be expressed in chains of held line per man hour or as extreme, high, medium, and low.
- Risk.** The relative chance or probability of fire starting, determined by the presence or absence of causative agencies. (A part of the fire danger on any area.)
- Rough.** A term used in the southern pine regions to denote the aggregate of living and dead plant materials that occurs upon or close to the ground following the exclusion of fire. (Roughs are classified either on the basis of composition [by species] or on age [number of years since last burning].)
- Scale, Appalachian.** A modification of the Beaufort scale specifications, devised by the Appalachian Forest Experiment Station. (It is based on conditions in the forested portions of the Southern Appalachian Mountain Region.)
- Scale, Beaufort.** An empirical scale in which the strength of wind is indicated by numbers from 0 to 12. (The original Beaufort scale was designed for use at sea. A Beaufort scale with specifications for land use is used today by the Weather Bureau.)

The following terms are those used by the Weather Bureau in forecasting:

<i>Forecast Terms</i>	<i>Wind Velocity Miles per Hour</i>
Calm	Less than 1
Very Light	1-3
Light	4-7
Gentle	8-12
Moderate	13-18
Fresh	19-24
Strong	25-38
Gale	39-54
Whole Gale	55-75
Hurricane	Over 75

Scale, Northern Rocky Mountain. A modification of the standard Beaufort scale specifications devised by the Northern Rocky Mountain Forest and Range Experiment Station. (It is based on conditions in the forested portions of the Northern Rocky Mountain Region—western Montana and northern Idaho.)

Sector. A logical or natural length of the control line handled as a unit for suppression purposes. (Normally a sector should not exceed the amount of line the man in charge (sector boss) can supervise and inspect adequately each shift.)

Sector Boss. *See* Boss, sector.

Seen Area. An area where the ground or the vegetation growing thereon can be seen directly from any established lookout point under prescribed atmospheric conditions. *See* Blind area.

Sets. A term used in connection with incendiary fires. National forest rules for reporting such fires are:

- (a) Where all sets burn together and are suppressed as one fire, all will be reported as one fire.
- (b) All individual sets suppressed, will be reported as one fire except in cases where more than one-quarter mile intervenes between any two adjacent sets. In this event, two or more fires will be recognized.

Short Term Men. Personnel employed for any forest work, in positions which are set up for less than the full 12 months of the calendar year. (Men employed for prevention or presuppression are included regardless of the shortness of the period of employment. Men employed partly or wholly for suppression throughout a fire season or a period of consecutive fire days are included if not continuously occupied on suppression, but men employed to suppress a particular fire or a continuous series of fires are excluded.)

Side Camp. *See* Camp, side.

Sling Psychrometer. *See* Psychrometer, sling.

Smoke Candle. A pyrotechnical product used for the production of smoke simulating a small fire and used in testing efficiency of lookout men and determining visibility distance. *See* Test fire.

Smoke Chaser. Any guard who goes to fires.

Smoke, Drift. *See* Drift smoke.

Smoke, False. Any phenomenon which is likely to be reported as a fire. (Sheep dust, gray cliff, fog, etc.) *See* False alarm.

Smoke Haze. The light deceptive smokiness caused by diffusion of smoke from past or distant fires is usually called smoke haze.

Smoke, Legitimate. Smoke resulting from locomotives, industrial operations, ranches, etc., and not from forest fires.

Smoker Fires. *See* Causes of fires.

Snags. Standing dead trees or parts of dead trees. (Snags less than 6 feet high are classed as stumps.)

Speed and Strength of Attack. The time control (elapsed time from origin of fire to arrival of first man) and manpower necessary to hold burned area to an acceptable or predetermined limit within a specific fuel type.

Spike Camp. See Camp, side.

Spot Burning. A modified form of broadcast slash burning in which only the heaviest accumulations of slash are fired and the fire is not allowed to spread over the entire cut-over area, the object being to reduce the fuels at minimum expense and with much less damage to the residual stand than would occur in a broadcast burn.

Spot Fires. Fires set in advance of or away from the main fire by flying sparks or embers.

Station, Cooperative Weather. An installation of meteorological instruments operated daily and yearlong by non-Weather Bureau personnel, reports being submitted monthly to the U. S. Weather Bureau.

Station, Fire-Danger. A forest station specially selected, equipped, and operated to measure the daily variable factors of fire danger. See Danger, variable.

Station, Fire-Weather. A forest meteorological station specially equipped and operated cooperatively with the U. S. Weather Bureau for measuring weather elements that have an important effect on fire control, forecasting climatological surveys, and research.

Statistical Fire. In national forest practice, a fire which is suppressed, wholly or in part by Forest Service employees or cooperators on which action is taken either to prevent the fire from spreading to or burning over national forest or other lands for which the Forest Service assumes protection responsibility. (Suppression action must be actual work on the fire itself and fully defensible in respect to the threat of spreading to national forest lands or national forest protected lands.)

Representative examples of *nonstatistical* fires are as follows:

- (a) Fires that have gone out naturally when reached.
- (b) Railroad fires confined to the right-of-way which do not endanger Forest Service protected land and are suppressed by railroad employees with or without Forest Service help.
- (c) Small fires resulting from legitimate slash or debris burning operations when extinguished by the causative agency.
- (d) Abandoned campfires which cannot spread because of the condition of forest fuels or weather conditions or are confined to improved fireplaces or stoves.
- (e) Individual incendiary sets when all sets burn together and are suppressed as one fire. In this event all sets will be reported as one fire.
- (f) Individual incendiary sets which are suppressed separately, where less than $\frac{1}{4}$ mile intervenes between any adjacent two sets. Only one fire will be reported in such cases.
- (g) Burning buildings, automotive equipment, haystacks, sawdust piles, etc., which under the prevailing conditions are not a menace to Forest Service protected lands.
- (h) Fires from any cause confined to private lands which do not endanger Forest Service protected lands and are suppressed by landowners or others responsible for their suppression with or without Forest Service aid.

Sticks, Moisture-Indicator. *See* Fuel-moisture-indicator sticks.

Straw Boss. *See* Boss, straw.

Suppression. All the work of extinguishing a fire beginning with its discovery.
See Fire control, Prevention, Presuppression.

Suppression Foreman. A guard in charge of a suppression squad.

Suppression Squad. Two or more men stationed at a strategic location, either regularly or in an emergency, for initial action on fires. Duties are essentially the same as those of individual firemen.

Surface Fire. *See* Types of fires.

Tangent Offset Method. A method used by firemen to get on line of sight from a lookout to a fire, where a compass shot on the lookout point cannot be obtained except from a point to one side of the line of sight.

Temporary Lookout Station. *See* Lookout station, temporary.

Test Fire. A controlled fire set with or without the knowledge of the detection organization for the purpose of checking the alertness of lookout men, or the effectiveness of any lookout station. (A smoke candle may be used for the same purpose.) *See* Smoke candle.

Thermometer, Maximum. *See* Maximum thermometer.

Thermometer, Minimum. *See* Minimum thermometer.

Towerman. A lookout man stationed at a tower.

Travel-Time Map. *See* Map, travel-time.

Trench. Formerly used as a synonym for "fire line" which is the preferred term because a fire line need only be scraped to mineral soil, not a dug way. (*See* Gutter trench which is the only type of fire line which needs to take the form of a ditch in mineral soil.)

Two-Foot Method. *See* Control-line classification.

Types of Fires.

Crown. A fire that burns through the tops of trees, brush, or chaparral, or which consumes all or a large part of the upper branches or foliage of trees, brush, or chaparral.

Ground. A fire confined to the materials composing the forest floor or beneath the surface as in peat beds. (Usually combined with surface fire but not to be confused with surface fire which burns only the top of the ground cover.)

Surface. A fire that runs over the forest floor burning only the surface litter, the loose debris, and the smaller vegetation or ground cover.

See Character of fires.

Variable Danger. *See* Danger, variable.

Visibility. The character or quality of an object or image with reference to its background and the transparency or clearness of the intervening atmosphere that permits it to be distinguished by the eye.

Visibility, Atmospheric. The relative transparency or degree of clearness of the atmosphere through which objects or smokes are seen.

Visibility Distance. The maximum range of vision in miles at which a look-out man can distinguish a standard or specified size of smoke column under specific atmospheric conditions.

Visibility Meter. An instrument for measuring the dependable range of distance to which a standard smoke column can be detected by the eye under various conditions of haze. Sometimes called "haze meter".

Weather. The state of the atmosphere at any particular time and place with respect to temperature, atmospheric pressure, wind, clouds, relative humidity, and precipitation. *See* Climate.

In the forest-fire weather forecasts issued by the U. S. Weather Bureau, the expected state of the weather is indicated by the following terms:

Clear. No precipitation; sky free or nearly free from clouds.

Partly Cloudy. No precipitation; sky partly clouded.

Cloudy or Overcast. No precipitation; sky completely overcast or nearly so.

Fair. No precipitation is to be expected; sky condition may range from clear to cloudy.

Generally Fair. No precipitation expected except for some possibility of light showers in widely scattered places.

Mostly Cloudy. No precipitation but mostly overcast skies.

Increasing Cloudiness. No precipitation during period, but progressive increase in cloudiness, with expectation that precipitation will follow at the time indicated in the forecast.

Decreasing Cloudiness. No precipitation but progressive decrease in the amount of sky covered, or density of clouds.

Threatening. Precipitation unlikely but sky covered with dark, lowering clouds. Precipitation hardly expected (less than 50 per cent chance).

Unsettled. Precipitation unlikely but considerable cloudiness and occasionally threatening weather. Precipitation not expected (less than 50 per cent chance of occurrence).

Clearing. Precipitation to end during the time period specified followed shortly by clearing skies.

Foggy. No precipitation but condensation on surface objects.

Rain or Snow. Precipitation of comparatively long duration expected over a major portion of the area and while amount not generally specified more than 0.02 inch expected.

Occasional Rain or Snow. Precipitation at infrequent intervals and not prolonged, but widespread and more than 0.02 inch expected.

Local Rain or Snow. Precipitation of comparatively long duration over limited portions of the area and amount indefinite unless modifying term is added.

General Rain or Snow. Widespread precipitation of prolonged duration, and in amount sufficient to materially reduce fire danger.

Showers or Flurries. Precipitation intermittent and of short duration.

Dew or Frost. Widespread liquid or frozen condensation on surface objects.

Wild Land. Protection forest and all other forest or range land used primarily for wood or forage production, recreation, or wildlife.

Wind Direction. The direction, with reference to the cardinal points of the compass, from which the wind blows or is expected to blow. In the fire weather forecasts and warnings by the U. S. Weather Bureau the following modifying terms are used in wind-direction forecasts:

Veering. A progressive change in a clockwise direction.

Backing. A progressive change in a counter-clockwise direction.

Becoming. Indicating a change from one to another specified direction.

Variable. Uncertain and irregular, usually subject to slow to moderate changes of varying magnitude.

Changeable. Uncertain and irregular changes of direction of more decided nature and magnitude than "variable".

Mostly. A modifier used when winds will be subject to some variability to indicate what direction will predominate.

Wind Velocity. The movement of air expressed in miles per hour or other units.

In forest-fire weather forecasts issued by the U. S. Weather Bureau, the wind velocity forecasts are modified by the following terms:

Gusty. Rapid and wide variations in force in short time intervals.

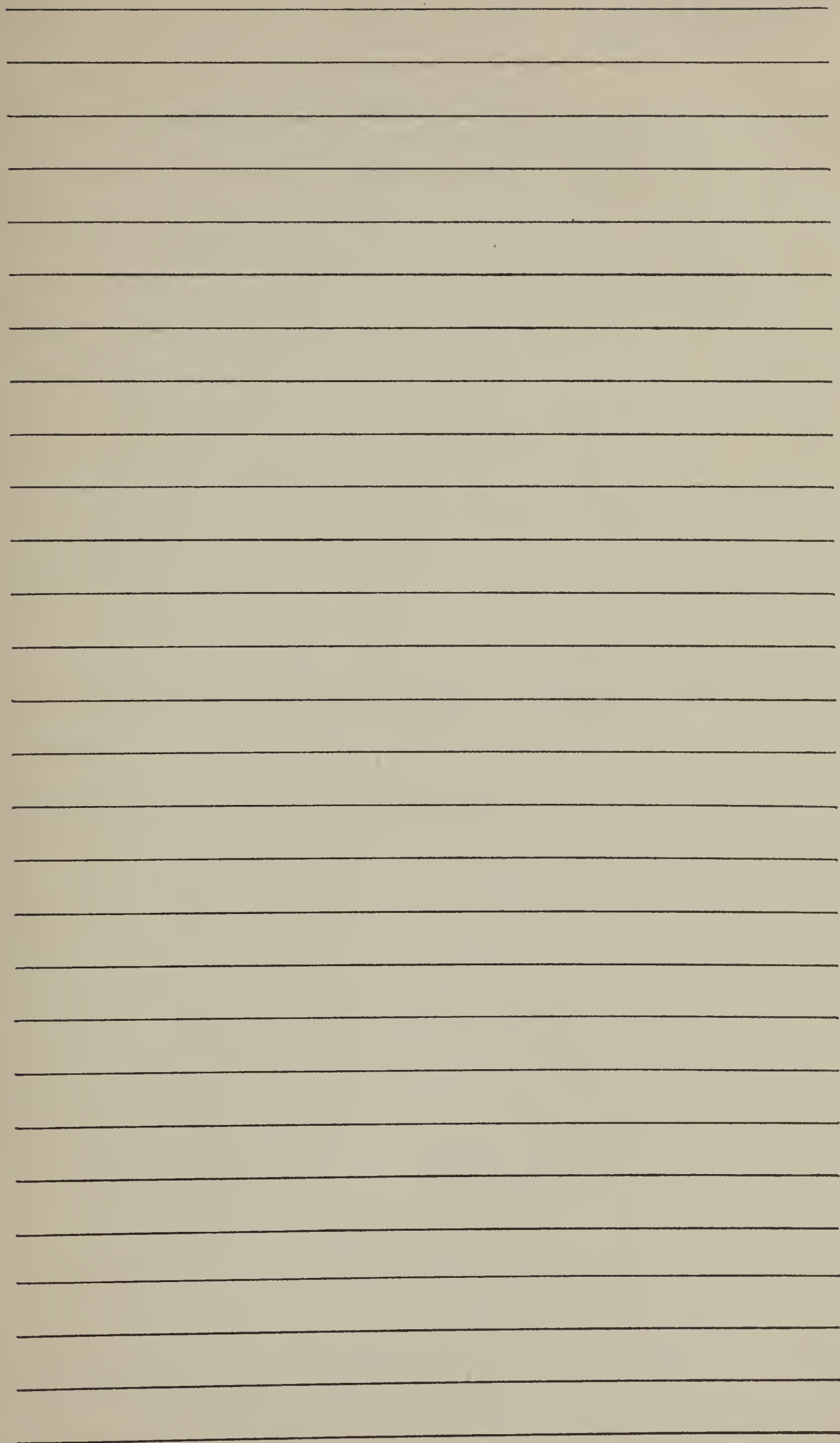
Squally. Recurrent blasts of longer duration than gusts and from a fairly steady direction.

Increasing or Decreasing. Used when a change in wind force is expected to indicate direction of the tendency.

See Scale, Beaufort.

Wood Cylinders. *See Fuel-moisture-indicator sticks.*

Work Period, First. *See First work period.*



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